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## United States Court of Appeals for the Federal Circuit

97-1345  
(Serial No. 07/633,940)

IN RE SHAIKH G. M. Y. ALHAMAD

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DECIDED: December 18, 1997

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Before RICH, LOURIE, and BRYSON, Circuit Judges.

RICH, Circuit Judge.

### DECISION

This appeal is from the 29 March 1996 decision of the Patent and Trademark Office (PTO) Board of Patent Appeals and Interferences (Board) rejecting the appealed claims of the Alhamad patent application serial No. 07/633,940 for fire resistant construction board (the Alhamad application). The Board reversed the examiner's rejections, but pursuant to 37 C.F.R. § 1.196(b) made new rejections of appealed claims 1-7 and 9 as obvious under 35 U.S.C. § 103. We reverse.

### BACKGROUND

The Alhamad application claims fire resistant construction board comprising a base sheet such as plaster board having embedded therein an extremely thin expanded metal net. According to the application, the presence of the thin expanded metal net significantly enhances the fire resisting property of the base sheet. Independent Claim 1 is representative for purposes of this appeal:

Claim 1. A highly fire resistant construction board comprising a base sheet formed from a water settable inorganic binder and having embedded therein a sheet of expanded metal net made from foil having a thickness in the range from about 0.028 to 0.5 mm.

Of particular importance to the obviousness rejections on appeal are the claim elements "expanded metal net" and "made from foil having a thickness in the range from 0.028 to 0.5 mm".

The primary reference relied upon by the Board in its new rejection is Bennie, British Patent No. 554,562 issued 09 July 1943. Bennie discloses a composite sheet material comprising two fibrous webs and an interposed reinforcement of wire netting or expanded metal. Bennie is limited, however, in several important respects. First, Bennie only discloses the use of wire netting and expanded metal; it does not disclose the use of expanded metal net — made from foil. Wire netting is typically made with wires having substantial tensile strength. Expanded metal is made by making numerous slits in a strong, stiff metal sheet and then expanding the slits to form a strong, stiff lattice for use in structurally reinforcing a composite — like the metal lattice one typically uses to build plaster walls. In contradistinction, an expanded metal net is only somewhat like expanded metal, but is made from such thin and flimsy material that it has little tensile strength or rigidity. Second, Bennie makes no mention of the fire protecting properties of the expanded metal, instead stating that fire-proofing is achieved by coating the board with "sodium silicate [water glass] with or without magnesium chloride." Bennie at page 2, col. 1, lines 33-34. The fire-proofing materials are applied "in the form of solution or paste." Bennie at page 2, col. 1, lines 58-61.

The secondary references relied upon by the Board include Schrenk, U.S. Patent No. 4,621,397 issued 11 November 1986; Phillips, U.S. Patent No. 3,192,098, issued 29 June 1965; and Stock, U.S. Patent No. 3,825,465 issued 23 July 1974. Schrenk discloses a very thin expanded metal net, but suggests it be used to fill fuel containers. Schrenk makes no suggestion that the expanded metal net be used to strengthen composite materials like plaster board. Phillips and Stock show that metal wire reinforcing sheets have been used in plaster building materials to provide strength, but make no suggestion of their use in promoting fire resistance.

The Board concluded that the claims would have been obvious from the teaching in Bennie of a construction board having embedded expanded metal or wire net in view of the teaching in Schrenk of very thin expanded metal net. As the Solicitor argues on appeal, the Board concluded that one skilled in the art would be motivated to use the expanded metal net of Schrenk as the strength reinforcing component of the Bennie board because of the recognized need in the construction art to make boards that are strong but light-weight. The Board then observed that the claimed fire resistance would be inherent in such a board and it was unnecessary for the art to explicitly teach such fire resistance because properties inherent in the art do not patentably distinguish from the art.

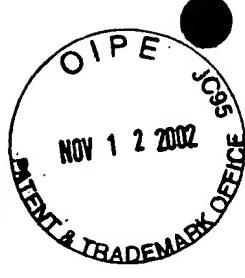
#### ANALYSIS

On appeal, Alhamad begins by noting that the term "expanded metal" has a specific meaning in the art that is operatively different from that of the claim element "expanded metal net." Citing Stock, one of the references relied upon by the examiner and the Board, Alhamad points out that expanded metal is well known in the industry to

be a stiff and strength enhancing reinforcement for composite materials. Alhamad then points out that the claimed "expanded metal net" is specified in the claims to be "made from foil having a thickness in the range from about 0.028 to 0.5 mm." Citing Schrenk, another reference relied upon by the examiner and the Board, Alhamad points out that such a thin expanded metal net is known in the art to have "only limited dimensional stability" and is so flimsy that it will collapse under its own weight. Schrenk at Col. 1, lines 27-29. As a result, according to Alhamad, no reasonable artisan would even contemplate using a flimsy expanded metal net as a strength enhancing agent for reinforcing a wall board. Therefore, there is no motivation to combine these references for any reason, let alone for the claimed reason of promoting fire resistance. We agree with Alhamad and conclude that the Board has failed to make even a *prima facie* showing of obviousness.

#### CONCLUSION

Because the Board has failed to make a *prima facie* showing of obviousness, the only ground of the rejection, we reverse the decision of the Board that the claimed invention is not patentable over the cited prior art.



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Attorney Docket No. VI-CIP-5

The stamp of the U.S. Patent and Trademark Office  
imprinted hereon acknowledges receipt and filing of:

Applicant: SHAIKH GHALEB MOHAMMAD YASSIN ALHAMAD

Title: CONSTRUCTION MATERIAL CONTAINING  
EXPANDED FLEXIBLE MATERIAL

USSN: 09/728,647 Filed: December 1, 2001

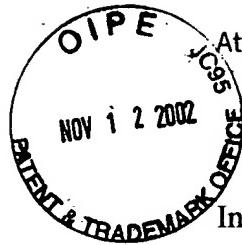
Amendment

Version with Markings to Show Changes Made  
Court Opinion - US Ct. of Appeals, Fed Cir., 97-1345

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Mailed To USPTO: November 7, 2002  
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Attorney Docket No. VI-CIP-5

AF/1700

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Inventor: Shaikh Ghaleb Mohammad Yassin Alhamad  
Application No.: 09/728,647  
Filing Date: December 1, 2000  
Title: CONSTRUCTION MATERIAL CONTAINING EXPANDED FLEXIBLE MATERIAL

Examiner: William P. Watkins, III  
Art Unit: 1772

Assistant Commissioner for Patents  
Box Response - No Fee  
Washington, D. C. 20231

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**CERTIFICATE OF MAILING**

The undersigned certifies that the attached AMENDMENT, VERSION WITH MARKINGS TO SHOW CHANGES MADE, COPY OF COURT OPINION FROM THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT, NO. 97-1345, together with this Certificate of Mailing and a postcard is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Assistant Commissioner for Patents, Box Response - No Fee, Washington, D.C. 20231, on November 7, 2002.

By: Charles E. Cates  
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